CLAIMS

What is claimed is:

1. A surveillance system comprising:

a first sensor apparatus adapted to transmit toward and receive from a subject in a subject position, first electromagnetic radiation in a frequency range of about 100 MHz to about 2 THz, from positions spaced from the subject position, the subject including at least a portion of a person in a subject position and detectable objects carried by the person, the first sensor apparatus producing from the received radiation, a first image signal representative of a first image of at least a portion of the subject;

a source of subject information about the subject that is relatable to objects potentially carried by the person, the source being of a type that is different from the first sensor apparatus; and

a controller adapted to control operation of the first sensor apparatus, and to produce, from the produced image signal and the subject information, relational information relating the produced image signal and the subject information.

2. The system of claim 1, in which the sensor apparatus and the controller are adapted to produce image data corresponding to a three-dimensional holographic first image of at least a portion of the subject.

3. The system of claim 2, in which the source of subject information is a second sensor apparatus adapted to detect first object information about an object potentially carried by the person, and the controller is adapted to produce object data indicative of whether the person carries an object that includes the object information.

4. The system of claim 3, in which the object information is one or more of a metal substance, an explosive substance, and a given chemical substance.

5. The system of claim 3, in which the controller is adapted to produce first object-image data indicative of whether the image includes characteristics corresponding to an object on the person, and to relate the object data to the object-image data.

6. The system of claim 1, in which the source is a second sensor apparatus adapted to detect second radiation transmitted from the subject, and to produce a second image signal representative of received second radiation, and the controller is further adapted to produce first and second image data from the respective first and second image signals, and to produce relational information relating the first and second image data.

7. The system of claim 6, in which the controller is adapted to produce first object-image data indicative of portions of the first image data that include first image characteristics corresponding to one or more objects carried by the person, to produce second object-image data indicative of portions of the second image data that include second image characteristics corresponding to one or more objects carried by the person, and to produce the relational information relating the first object-image data to the second object-image data.

8. The system of claim 7, in which the controller is further adapted to identify first and second object-image data indicative of one or more objects located near the same portions of the subject, and to produce relational information identifying the portions of the subject for which objects are identified from the first and second object-image data.

9. The system of claim 8, in which the controller is further adapted to assign one or more of a relative weight, value, attribute, and relative indicator to each object identified based on the relational information.

10. The system of claim 6, in which the second sensor apparatus detects electromagnetic radiation in at least one specific range of frequencies.

11. The system of claim 10, in which the second sensor apparatus detects one or more of visible radiation, infrared radiation, radio-frequency radiation, Terahertz radiation, and x-ray radiation.

12. The system of claim 1, in which the source is a second sensor apparatus adapted to detect the subject information for different associated areas of the person, and the controller is adapted to produce first object-image data indicative of portions of an image that include first image characteristics corresponding to one or more objects carried by the person, and to produce the relational information relating detected subject information at associated areas to object-image data for portions of the image corresponding to the associated areas.

13. The system of claim 12, further comprising a first moving mechanism adapted to move the first and second sensor apparatus relative to the subject position.

14. The system of claim 13, further comprising a second moving mechanism adapted to move one of the first and second sensor apparatus relative to the other.

15. The system of claim 14, in which the controller is adapted to produce object-image data indicative of whether the first image includes characteristics corresponding to an object on the person, and to control the second moving mechanism to move the second sensor apparatus relative to the subject position when the object-image data is indicative of portions of the image that include image characteristics.

16. The system of claim 14, further comprising a third sensor apparatus adapted to detect second object information about a detectable object, the second object information being different than the first object information and the third sensor apparatus not being adapted to transmit toward and receive from the subject, electromagnetic radiation in a frequency range of about 100 MHz to about 2 THz.

17. The system of claim 16, in which the second moving mechanism is adapted to move the third sensor apparatus, and the controller is adapted to control the second moving mechanism to move the third sensor apparatus relative to the subject position when the first object information is not detected by the second sensor apparatus.

18. The system of claim 1, in which the source includes a second sensor apparatus adapted to detect one or more of a metal, an explosive, a chemical substance, and a feature identifying the person.

19. The system of claim 1, in which the source includes a second sensor apparatus adapted to detect a feature identifying the person, and the source further includes context information relating the feature identifying the person with a policy regarding concealed objects potentially carried by each person associated with the identifying feature.

20. The system of claim 19, in which the controller is further adapted to assign a relative value to each object identified based on the context information.

21. The system of claim 1, in which the source is adapted to receive information identifying a characteristic of the person, and the source further includes context information relating the identifying information with a policy regarding concealed objects potentially carried by each person to which the identifying information applies.

22. The system of claim 21, in which the source includes a second sensor apparatus adapted to detect an identifying item associated with the person, and to produce the identifying information.

23. The system of claim 22, in which the identifying item is one or more of a physical feature of the person and an identifying object carried by the person.

24. The system of claim 23, in which the identifying item is a physical feature that is one or more of a fingerprint, a retinal image, a facial image, and a volumetric representation.

25. The system of claim 23, in which the identifying item is an identifying object that is one or more of a badge and a radio-frequency identification device.

26. A method of surveilling a subject in a subject position, the subject including a person and objects carried by the person, comprising:

transmitting toward a subject in a subject position, first electromagnetic radiation in a frequency range of about 100 MHz to about 2 THz, from positions spaced from the subject position, the subject including at least a portion of a person in a subject position and detectable objects carried by the person;

receiving from the subject reflected transmitted radiation;

producing from the received radiation, a first image signal representative of a first image of at least a portion of the subject;

storing subject information about the subject that is relatable to objects potentially carried by the person, the subject information not being derived from the image signal; and

producing relational information relating the image signal and the subject information.

27. The method of claim 26, further comprising producing image data corresponding to a three-dimensional holographic first image of at least a portion of the subject.

28. The method of claim 27, further comprising detecting first object information about an object potentially carried by the person from a source other than the image signal, and producing object data indicative of whether the person carries an object, based on the object information.

29. The method of claim 28, in which detecting object information includes detecting one or more of a metal substance, an explosive substance, and a given chemical substance.

30. The method of claim 28, further comprising producing, from the image signal, first object-image data indicative of whether the image includes characteristics corresponding to an object on the person, and relating the object data to the object-image data.

31. The method of claim 26, further comprising detecting second radiation transmitted from the subject, and producing a second image signal representative of received second radiation, and producing first and second image data from the respective first and second image signals; and in which producing relational information includes producing relational information relating the first and second image data.

32. The method of claim 31, further comprising producing first object-image data indicative of portions of the first image data that include first image characteristics corresponding to one or more objects carried by the person, and producing second object-image data indicative of portions of the second image data that include second image characteristics corresponding to one or more objects carried by the person; and in which producing relational information includes producing relational information relating the first object-image data to the second object-image data.

33. The method of claim 32, further comprising identifying first and second object-image data indicative of one or more objects located near the same portions of the subject, and producing relational information identifying the portions of the subject for which objects are identified from the first and second object-image data.

34. The method of claim 33, further comprising assigning a relative value to each object identified based on the relational information.

35. The method of claim 31, in which detecting second radiation includes detecting one or more of optical radiation, infrared radiation, radio-frequency radiation, Terahertz radiation, and x-ray radiation.

36. The method of claim 26, further comprising detecting the subject information for different associated areas of the person, and producing from the image signal, first object-image data indicative of portions of an image that include first image characteristics corresponding to one or more objects carried by the person; and in which producing relational information includes producing relational information relating subject information at associated areas to object-image data for portions of the image corresponding to the associated areas.

37. The method of claim 36, in which transmitting and receiving radiation includes transmitting and receiving radiation using a first sensor apparatus, and in which detecting subject information includes detecting subject information using a second sensor apparatus, and further comprising moving the first and second sensor apparatus relative to the subject position during transmitting, receiving, and detecting.

38. The method of claim 37, further comprising moving one of the first and second sensor apparatus relative to the other.

39. The method of claim 38, further comprising producing object-image data indicative of whether the first image includes characteristics corresponding to an object on the person, and moving the second sensor apparatus relative to the subject position when the object-image data is indicative of portions of the image that include image characteristics.

40. The method of claim 39, further comprising detecting with a third sensor apparatus, second object information about a detectable object, the second object information being different than the first object information and the image signal, and moving the third sensor apparatus while detecting the second object information when the first object information is not detected by the second sensor apparatus.

41. The method of claim 26, in which the subject information includes one or more of a metal substance, an explosive substance, a chemical substance, and a feature identifying the person, the method further comprising detecting in the subject, one or more of a metal substance, an explosive substance, a chemical substance, and a feature identifying the person.

42. The system of claim 26, further comprising detecting a feature identifying the person, and storing subject information includes storing context information relating the feature identifying the person with a policy regarding the appropriateness of concealed objects potentially carried by each person associated with the identifying feature.

43. The method of claim 42, further comprising assigning a relative value to each object identified based on the context information.

44. The method of claim 26, in which storing subject information includes storing information identifying a characteristic of the person, and storing context information relating the identifying information with a policy regarding the appropriateness of concealed objects potentially carried by each person to which the identifying information applies.

45. The method of claim 44, further comprising detecting an identifying item associated with the person, and producing the identifying information based on the identifying item.

46. The method of claim 45, in which detecting an identifying item includes detecting one or more of a physical feature of the person and an identifying object carried by the person.

47. The method of claim 46, in which detecting an identifying item includes detecting one or more of a fingerprint, a retinal image, a facial image, and a volumetric representation.

48. The method of claim 46, in which detecting an identifying item includes detecting one or more of a badge and a radio-frequency identification device.